

# Target Missouri II:

A Regional Approach to Economic  
Development

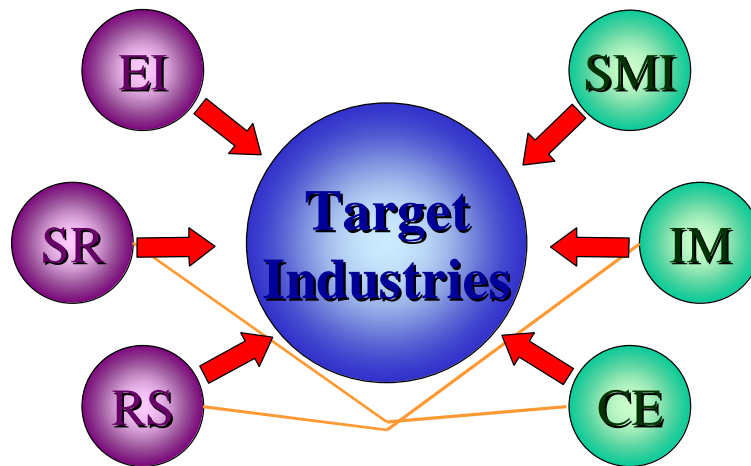
***Kansas City Metro Region***

**TM2**

## Executive Summary

*“Developing a comprehensive plan to begin the twenty-first century with a strong and growing economy.”* This was the goal of the original Target Missouri program initiated by the Department of Economic Development (DED) in 1996. Target Missouri II (TM2) is similar in nature to the original initiative. TM2 approaches the issue of identifying priority industries from the perspective that *different industries affect different regions differently*.

Six analysis tools are used to determine which industries should be chosen for targeting in a given region. The first two, Specialization Ratios (SR) and the Regional Shift (RS) component of Shift-Share Analysis (SSA), help to determine which industries might have a competitive advantage in a region. The third and most important type, the Economic Impact (EI) analysis, helps to identify which industries will benefit the region most should they expand. The Skills-Mismatch Index (SMI) determines whether the skills of the available workforce in a region match the needed skills for a particular industry. The Industrial Mix (IM) component of SSA helps to identify emerging industries. Finally, the Current Employment (CE) level of a regional industry helps to determine whether needed infrastructure is in place to attract particular industries and is an important factor when considering SRs. Industries are awarded points on a scale of 0 to 100 based on whether they meet necessary criteria in these six categories. Those industries that score the highest are those recommended for targeting. The graphic below illustrates these ideas.



The recommendations of TM2 and the original Target Missouri study are, in fact, similar. However, by focusing solely on the Kansas City Metro Area, TM2 has provided a list of industries that specifically matches the potential of Kansas City.

The tables that follow present those industries with scores of 50 or higher on the target scale for the Kansas City Metro Region. Not surprisingly, Motor Vehicles and Equipment Mfg. (SIC 371) earned a perfect score of 100 points. This industry has

consistently scored at the top for each region previously surveyed. However, SIC 353, Construction Machinery Mfg., also scored a surprising 100 points. Another six industries (of the 85 total) scored 80 points or higher, while 45 of these scored the minimum 50 points.

It is important to note the strong showing of IT firms in the KC Metro Region. Communications (SIC 48) and Computer Services (SIC 737) received 90 and 70 points, respectively.

Other interesting findings are related to the Life Sciences Industries in the KC Metro Region. Only one industry, Agriculture Chemicals (SIC 287) has a relatively strong presence in this Region. Other life science-manufacturing industries, including Pharmaceuticals (SIC 283), have high potential economic impact and a good skills match among the regions workforce, but a relatively weak presence. This implies the KC Metro Region is ripe for development in areas such as Pharmaceuticals, Industrial Chemicals (SIC 286), and Medical Instrument production (SIC 384). Conversely, the Research Services industry (SIC 873) scored very low in this study.

TM2 has provided a list of 85 industries that have the best potential for economic development in the Kansas City Metro Region. The original Target Missouri provided a list of only 34 target industries for the entire Kansas City Metro Region. Of these, 26 appear on both lists, so in this case, the two studies have obtained similar results. The expanded list generated by TM2 provides a list of industries that better fits the specifics of the Kansas City Metro Region, as well as providing rankings that shed some light on the relative importance of certain industries.

Kansas City Metro Region Target Industries		
SIC	Industry	Total Score
353	Construction and related machinery	100
371	Motor vehicles and equipment	100
352	Farm and garden machinery and equipment	95
355	Special industry machinery	95
267	Converted paper products except containers	95
356	General industrial machinery and equipment	90
14	Nonmetallic minerals, except fuels	90
48	Communications	90
346	Metal forgings and stampings	75
364	Electric lighting and wiring equipment	75
209	Miscellaneous food and kindred products	75
40	Railroad	75
45	Air Transportation	75
324	Hydraulic cement	70
327	Concrete, gypsum, & plaster products	70
349	Miscellaneous fabricated metal products	70
357	Computer and office equipment	70
362	Electrical industrial apparatus	70
366	Communications equipment	70
374	Railroad equipment	70
381	Search and navigation equipment	70
386	Photographic equipment and supplies	70
204,207	Grain mill products and fats and oils	70
287	Agricultural chemicals	70
737	Computer and data processing services	70
60	Depository institutions	65
64	Insurance agents, brokers, and services	65
344	Fabricated structural metal products	60
354	Metalworking machinery and equipment	60
491,%493	Electric utilities	60
735	Miscellaneous equipment rental and leasing	60
791,799	Amusement and recreation services, nec	60
836	Residential care	60
348	Ordnance and ammunition	55
358	Refrigeration and service industry machinery	55
359	Industrial machinery, nec	55
277	Greeting cards	55
308	Miscellaneous plastics products, nec	55
793	Bowling centers	55
833	Job training and related services	55

Kansas City Metro Region Target Industries		
SIC	Industry	Total Score
252,253,259	Office and misc. furniture and fixtures	50
332	Iron and steel foundries	50
333	Primary nonferrous smelting & refining	50
334,339	All other primary metals	50
335	Nonferrous rolling and drawing	50
341	Metal cans and shipping containers	50
342	Cutlery, hand tools, and hardware	50
351	Engines and turbines	50
361	Electric distribution equipment	50
363	Household appliances	50
365	Household audio and video equipment	50
367	Electronic components and accessories	50
369	Miscellaneous electrical equipment	50
373	Ship and boat building and repairing	50
375,379	Miscellaneous transportation equipment	50
382	Measuring and controlling devices	50
384	Medical equipment, instruments and supplies	50
385	Ophthalmic goods	50
387	Watches, clocks, and parts	50
393,395,396,399	Manufactured products, nec	50
201	Meat products	50
202	Dairy products	50
203	Preserved fruits and vegetables	50
205	Bakery products	50
206	Sugar and confectionery products	50
208	Beverages	50
261-263	Pulp, paper, and paperboard mills	50
265	Paperboard containers and boxes	50
272	Periodicals	50
273	Books	50
281,286	Industrial chemicals	50
282	Plastics materials and synthetics	50
283	Drugs	50
284	Soap, cleaners, and toilet goods	50
285	Paints and allied products	50
289	Miscellaneous chemical products	50
291	Petroleum refining	50
295,299	Miscellaneous petroleum and coal products	50
301	Tires and inner tubes	50
302,305,306	Rubber products and plastic hose and footwear	50
10	Metal mining	50
12	Coal mining	50
44	Water transportation	50
46	Pipelines, except natural gas	50
473,474,478	Miscellaneous transportation services	50

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**Kansas City Metro Region**

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## **I. Introduction**

### **A. Target Missouri**

*“Developing a comprehensive plan to begin the twenty-first century with a strong and growing economy.”* This was the goal of the original Target Missouri program initiated by the Department of Economic Development (DED) in 1996. DED contracted with the Midwest Research Institute of Kansas City, who identified nine related-industry categories, or “clusters”, that will be key to Missouri’s economy in the coming years. These clusters include business and financial services, chemicals and materials, electronics and electronic equipment, health products and services, information and media, food products, paper products, transportation equipment, and tourism. These clusters have since been combined into the following categories: advanced manufacturing, agribusiness, biotechnology, financial services, information and media, transportation services, and tourism.

Officials from DED then met with community and business leaders throughout the state to determine ways to improve the state’s economic infrastructure to provide an environment suitable for the attraction and expansion of industries within the identified clusters. Economic infrastructure includes such things as workforce, highways, telecommunications, technology, capital, taxation, regulations, and quality of life. These meetings provided priority issues that DED is addressing while devising future development plans.

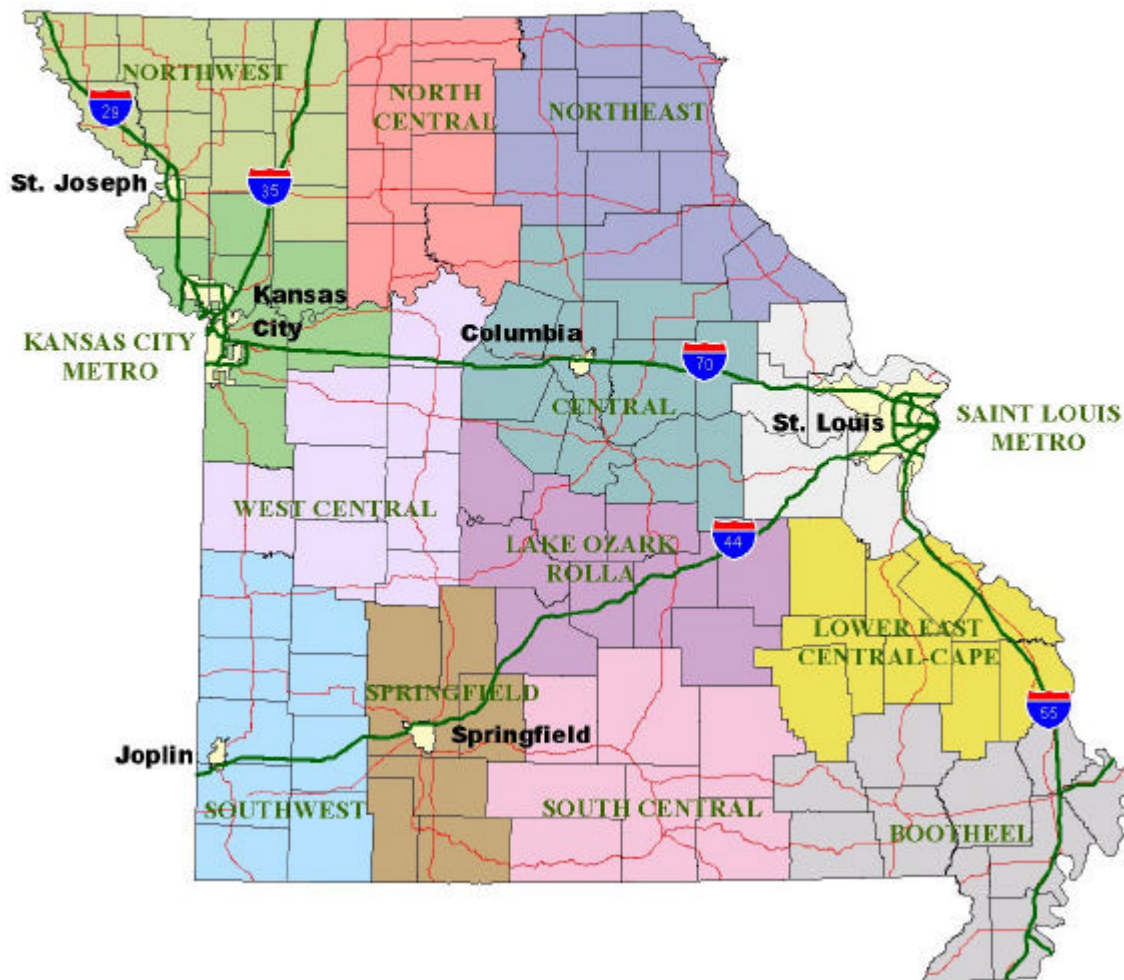
Target Missouri II is similar in nature to the original Target Missouri initiative. Although Target Missouri II (TM2) is meant to be an update to its predecessor and the analysis methods are similar in some regards, TM2 approaches the issue of identifying priority industries from the perspective that *different industries affect different regions differently*. The Target Missouri program, using specialization ratios, identified industries that best fit the state. After using these ratios to identify clusters, MRI determined which, of these clusters could be supported by the individual regions within the state. This is a “top-down” approach. TM2 also uses specialization ratios, but combines them with shift-share analysis, an emphasis on economic impact, and a consideration for the current capacity of the workforce. Further, TM2 focuses on each of the fifteen regions in Missouri (the original Target Missouri included only eight). At the completion of the fifteen individual studies, the results are aggregated to make recommendations as to the best plan for future development in the state. This is a “bottom-up” approach.

### **B. Regions in Missouri**

The state of Missouri is a diverse state, so diverse that it is often referred to as a microcosm of the nation as a whole. Missouri includes both sprawling urban areas and seemingly empty rural areas. Regions within the state depend on many different industries to support their economies, ranging from advanced manufacturing and information technology to basic farming. Topography and geography also vary across

the state, from the smooth glacial plains in the north to the rugged Ozarks in the southwest to the Mississippi delta region in the Bootheel. Access to transportation also varies across the state, with some areas having access to highways, rivers, and airports, while others are rather isolated.

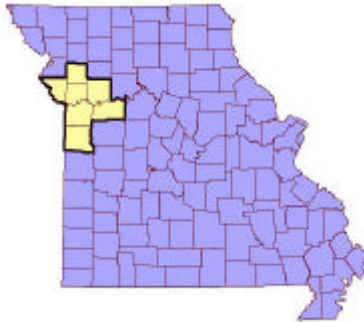
## MISSOURI ECONOMIC REGIONS



Based on these ideas, Missouri was broken into fifteen economic regions. These regions were originally based on commuting patterns with some being modified to match current Census Bureau definitions of certain metropolitan areas. The fifteen regions, shown in the map above, include: Bootheel, Central, Kansas City, Kansas City Metro, Lower East

Central-Cape, Lake Ozark-Rolla, North Central, Northeast, Northwest, St. Louis, St. Louis Metro, Springfield, South Central, Southwest, and West Central.

### **C. Kansas City Metro Region**



The economy of the Kansas City Metro Region generally keeps pace with the economy of Missouri as a whole. There has been a varied amount of economic growth in this region during the last ten years, with Cass and Platte Counties seeing good progress, while urban areas in Jackson County are growing at a slower pace. The population growth since 1990 in the Kansas City Metro Region was 8.7%, compared to 6.7% for the state. The poverty rate for this area is 10.4%. This compares with 12.4% for the state as a whole. The unemployment rate during 2000 for the Kansas City Metro Region was 3.3%, slightly lower than the state's rate of 3.5%. The growth in personal income and per capita income in the Kansas City Metro Region over the past decade is nearly equivalent to the growth of the state as a whole. However, per capita income in the region was \$27,764 during 1999, slightly more than the state average of \$26,404.

#### **Some of the large employers in this region include:**

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| • ABC Media, Inc.                  | • Honeywell                          |
| • Ameristar                        | • Orbseal LLC                        |
| • AT&T Corp.                       | • Research Medical Center            |
| • Cameron Community Hospital       | • St. Luke's Hospital of Kansas City |
| • Children's Mercy Hospital        | • Trans World Airlines, Inc.         |
| • Ford Motor Co.                   | • UMB Bank                           |
| • Hallmark Cards                   | • US Post Office                     |
| • Harrah's-North Kansas City Corp. | • University of Missouri             |
| • Higginsville Habilitation Center | • Wal-Mart Associates, Inc           |

# Kansas City Region



The two largest industries by employment in the region are Services (28.3%) and Trade (23.5%). Over 70% of the employment in these industries is concentrated in Jackson County. Government accounts for just over 15% of the region's employment. Jackson County also accounts for over 65% of employment in Manufacturing (12.0%), the third largest private industry. These figures are from ES-202 data.

The annual unemployment average for the area during 2000 was 3.2%. For counties in the region had unemployment rates below 3%, while Ray County (4.2%) was the only county higher than 4%. Total labor force for the region is estimated to be about 613,848.

## II. Analysis of Industries in Kansas City Metro Region

### A. Conceptual Model of Data Analysis for TM2

Six analysis tools are used to determine which industries should be chosen for targeting in a given region. The first two, Specialization Ratios (SR) and the Regional Shift (RS) component of Shift-Share Analysis (SSA), help to determine which industries might have a competitive advantage in a region. The third and most important type, the Economic Impact (EI) analysis, helps to identify which industries will benefit the region most should they expand. The Skills-Mismatch Index (SMI) determines whether the skills of the available workforce in a region match the needed skills for a particular industry. The Industrial Mix (IM) component of SSA helps to identify emerging industries. Finally, the Current Employment (CE) level of a regional industry helps to determine whether needed infrastructure is in place to attract particular industries and is an important factor when considering SRs. Industries are awarded points on a scale of 0 to 100 based on whether they meet necessary criteria in these six categories. Those industries that score the highest are those recommended for targeting. The diagram below presents a graphic illustration of this methodology. The orange lines connect those factors that have a specific relationship as described above.



## B. Specialization Ratios

Specialization Ratios (SR) are a simple economic development tool. SRs help to identify what are known as "basic" and "non-basic" industries in the local economy. Basic industries are those which draw money into the economy from outside the region, while non-basic or service-producing industries serve the needs of the local populace and businesses within its borders. SRs evaluate the degree that a region specializes in a certain industry by comparing two ratios: the ratio of employment within the industry in the region to total regional employment; and the ratio of employment within the industry nationally to total nation employment. In other words, it measures the degree to which an area specializes in an industry relative to the nation.

The formula for an SR is as follows:

$$SR_i = \frac{E_{ir} / E_r}{E_{in} / E_n}$$

where:

$SR_i$  = Specialization Ratio for the Industry  
 $E_{ir}$  = Employment in the Industry in the Region  
 $E_r$  = Employment in the Region  
 $E_{in}$  = Employment in the Industry in the Nation  
 $E_n$  = Employment in the Nation

An  $SR = 1$  indicates the percentage of regional employment in the industry is the same as the percentage of national employment in the industry. An  $SR > 1$  indicates a high concentration of employment in an industry in a region, which thus implies a competitive advantage for that industry there.

SRs have several advantages and disadvantages. They are extremely simple to calculate and interpreting them is straightforward. However, a high SR does not necessarily indicate a significant level of employment.

To calculate SRs for the Kansas City Metro Region, baseline employment data from REMI Policy Insight (REMI) Multi-Region Model for Missouri for the year 1998 was used. (Appendix B contains information about the REMI model.) Baseline employment data is broken down into 170 sectors in the REMI model. The table below presents the industries with the highest SRs in the Kansas City Metro Region. Appendix B presents the SRs for all industries.

Specialization Ratios in the Kansas City Metro Region			
SIC	Industry	Employment	SR
277	Greeting cards	2,803	65.04
348	Ordnance and ammunition	2,711	41.04
352	Farm and garden machinery and equipment	884	6.27
364	Electric lighting and wiring equipment	1,432	5.88
793	Bowling centers	923	5.43
209	Miscellaneous food and kindred products	1,289	5.15
324	Hydraulic cement	122	4.92
371	Motor vehicles and equipment	5,916	4.20
308	Miscellaneous plastics products, nec	2,795	2.78
40	Railroad	716	2.39
763-764	Watch, jewelry, & furniture repair	337	2.37
267	Converted paper products except containers	790	2.31
204,207	Grain mill products and fats and oils	506	2.31
722,729	Personal services, nec	1,847	2.29
791,799	Amusement and recreation services, nec	5,495	2.14
762	Electrical repair shops	588	2.00

### C. Regional Shifts

While SRs provide a method of looking at data statically, or at one point in time, Shift-Share Analysis (SSA) provides a method of looking at data dynamically, or how it has changed over time.

To complete the SSA, the same 170-sector employment data used for the SR section was again used. Since the SSA looks at change over time, data for the year 1993 was used as the baseline year. SSA decomposes regional change to show what part of growth is due to national trends, and what part of growth is specific to the region. SSA breaks the change into three parts: national share, industry mix, and regional shift. The national share (NS) is the expected change in employment in the industry if the region grew at the same rate as the nation. The industry mix (IM) measures the extent to which the region specializes in industries that are fast- (or slow-) growing industries at the national level. The regional shift (RS) measures the relative performance of a regional industry.

For TM2, SSA is used as a method of analyzing employment growth in the region from 1993 to 1998. SSA can also be applied to data concerning wages or output.

The Shift-Share Identity is the following equation:

$$E_t - E_{t-1} = NS + IM + RS$$

where:

$E_t$	= final year (1998)
$E_{t-1}$	= base year (1993)
NS	= $g_n E_{ir(1993)}$
IM	= $(g_{in} - g_n) E_{ir}$
RS	= $(g_{ir} - g_{in}) E_{ir}$
$g$	= growth rate
$i$	= industry
$r$	= region
$n$	= nation

The figure for NS provides little information. A positive IM indicates that the industry is fast-growing at the national level. The RS is the most interesting number for the purposes of TM2. A positive RS is believed to indicate a possible competitive advantage for that industry in the region, for it has seen growth above what is expected due to national trends. When combined with a positive IM, a positive RS might indicate an emerging sector or a target with potential.

Like SRs, SSA has both advantages and disadvantages. SSA is simple to use and to interpret. However, it does not identify factors causing growth, nor does it reflect the capacity of a region to grow. In other words, SSA indicates “what” happened but not “why” it occurred.

To calculate the RSs for the Kansas City Metro Region, baseline employment data from REMI for the years 1993 and 1998 in the 170 sectors was used. The table on the following page presents those industries with a large positive RS. Appendix C presents the RS for all industries.

#### **D. Economic Impacts by Industry**

Perhaps the most important question addressed by TM2 is “Which industry, if it expands in the region, will have the greatest economic impact?” Alternatively, from the perspective of potential policy-making, the question might be “Which industry will have the biggest bang for the buck?”

The Regional Shifts provided by Shift-Share Analysis provide a snapshot of how the industrial mix changed over time. The Specialization Ratios give an indication of the current industry mix. The Economic Impact (EI) section provides a look into the future.

Kansas City Metro Shift Share Analysis 1993-1998					
SIC	Industry	NS	IM	RS	Total
48	Communications	140	87	2,120	2,347
791,799	Amusement and recreation services, nec	320	563	2,052	2,934
	Federal Military	392	-833	977	535
	State and Local Government	1,634	-808	828	1,654
65	Real estate	241	-66	535	710
60	Depository institutions	278	-226	522	574
86	Membership organizations	208	13	461	682
371	Motor vehicles and equipment	556	465	436	1,457
793	Bowling centers	73	-84	345	334
45	Air Transportation	5	17	234	256
835	Child day care services	82	198	231	512
393,395,396,399	Manufactured products, nec	26	-5	228	249
836	Residential care	90	45	211	346
792	Producers, orchestras, and entertainers	30	14	171	215
277	Greeting cards	317	-208	150	259
352	Farm and garden machinery and equipment	90	-68	140	162
348	Ordnance and ammunition	396	-997	139	-462
308	Miscellaneous plastics products, nec	297	-10	130	417
353	Construction and related machinery	53	15	92	160
833	Job training and related services	38	20	89	146
354	Metalworking machinery and equipment	48	17	85	150
359	Industrial machinery, nec	44	21	78	142
70	Hotels and other lodging places	202	-17	77	263
82	Educational services	497	-14	77	560
732,733,738	Miscellaneous business services	329	456	77	862
356	General industrial machinery and equipment	35	-10	59	84
267	Converted paper products except containers	89	-72	56	73
14	Nonmetallic minerals, except fuels	29	-41	50	38

A primary issue to be addressed here is the definition of economic impact. Economic impact generally means the total multiplying effect due to the introduction of new jobs in a region. Depending on the purpose of the study being done, EI can indicate total jobs created, total salary gained, total output created, total state or local revenue created, or a myriad of other possible variables and their combinations. Since no one variable is any better than another, two indices, a regional index and a state index, have been created for TM2 combining five different indicators. Both indices attempt to measure the relative impacts of 100 new jobs in each of 49 individual industrial sectors using the REMI model.<sup>1</sup> The 49 individual sectors are an aggregated version of the 170 sectors used in the SR and RS analyses. Only these 49 sectors are analyzed due to the limitations of the REMI model.

The Regional Index combines the Employment Impact and the Total Wage and Salary Impact *within the region*. The dynamic forecasting capabilities of the REMI model provide not only forecasts for the immediate year, but also up to thirty-five years into the future. Since some industries have a varying degree of impact in any given year, the average employment impact over the first five years was taken as the Employment

<sup>1</sup> For the purposes of EI, the Farm sector and the three Government sectors were not included, being outside DED's scope of work.

impact of the 100 new jobs in each individual industry. For similar reasons, the net present value of the total wage and salary impact over the first five years was taken as the Wage and Salary Impact.

Because it is impossible to combine these two scores in any straightforward manner, the two scores were normalized, or given a z-score, within their respective categories. The formula for a z-score is the standard normalization formula:

$$Z_i = \frac{(X_i - \mu)}{s}$$

where:

$Z_i$  = z-score of a value

$X_i$  = actual value

$\mu$  = mean of all values

$s$  = standard deviation of all values

The z-scores for Employment and Wage were then averaged to determine the Average Score. **The industries with the highest Average Scores are the industries that have the highest potential EI within the region.**

Since the scores are normalized, scores of zero do not indicate that there is no economic impact. Rather, a score of zero indicates an impact that is about average for all of the industries within that region. Similarly, a negative score indicates an impact that is below average. Scores with a magnitude greater than 1 indicate a relatively large economic impact.

The State Index combines three variables in an analogous fashion. These variables are Employment Impact, Wage and Salary Impact, and State Fiscal Revenue Impact, *at the statewide level*. However, for the purposes of this Central Region study, only the Regional Index shall be considered.

The table on the following page presents the EIs of selected manufacturing industries in the Kansas City Metro Region. For instance, 100 new jobs in the Furniture Manufacturing Industry would lead to a total of 155 new jobs and nearly \$20 million in new wages for the region. The second table indicates that this is a relatively low economic impact. On the other hand, 100 new jobs in Primary Metals leads to a relatively high impact. The third table presents those industries with the highest economic impact in Kansas City. Appendices D & E present the EI scores for all industries in Kansas City.

Economic Impact of 100 New Jobs				
Kansas City Metro Region				
Industry Group			Regional Impact	
SIC	Sector	Average Annual Salary	Employment	Wages and Salaries
24	Lumber	\$21,335	129	\$12,490,845
25	Furniture	\$34,974	155	\$19,638,195
32	Stone,Clay,Etc	\$38,840	196	\$26,899,859
33	Primary Metals	\$45,701	205	\$31,413,434
34	Fabricated Metals	\$42,345	158	\$23,812,666
35	Machinery & Computers	\$42,464	197	\$30,094,395

Impact Z-Scores by Industry				
Kansas City Metro Region				
Industry Group		Regional Impact		
SIC	Sector	Total Employment	Wages and Salaries	Average Score
24	Lumber	-0.51	-0.71	-0.61
25	Furniture	-0.25	-0.27	-0.26
32	Stone,Clay,Etc	0.15	0.16	0.16
33	Primary Metals	0.24	0.43	0.34
34	Fabricated Metals	-0.23	-0.02	-0.13
35	Machinery & Computers	0.16	0.35	0.26

Impact Z-Scores by Industry				
Kansas City Metro Region				
Industry Group		Regional Impact		
SIC	Sector	Total Employment	Wages and Salaries	Average Score
49	Public Utilities	4.15	3.29	3.72
29	Petroleum Products	3.22	2.92	3.07
40	Railroad	2.91	2.97	2.94
48	Communications	1.42	1.56	1.49
28	Chemicals	1.26	1.68	1.47
371	Motor Vehicles	0.77	1.18	0.98
10,12-14	Mining	0.93	0.53	0.73
372-379	Rest of Transportation Equipment	0.24	0.91	0.57
33	Primary Metals	0.24	0.43	0.34
35	Machinery & Computers	0.16	0.35	0.26
60	Banking	0.23	0.23	0.23

## E. Skills-Mismatch Index

The skill level of the workforce is an important factor in determining which industries should be targeted. Different industries require different labor skills for them to be successful. High-skill firms may not wish to locate in an area with a poorly educated workforce where qualified employees are difficult to find. Low-skill firms may not wish to locate in a highly educated area since they may have to pay higher wages.

One method to measure the disparity between the demand of each skill level of an industry and the supply of each skill level in the region is by using the Skill-Mismatch Index (SMI). Higher SMI values represent a greater mismatch of labor force skills for the industry in the region.

The SMI is calculated by taking the difference between the industry skill “demand” minus the region skill “supply”. Industry skill demand is defined as the average proportion of high-, semi-, and low-skilled workers within an industry using data from the Career Guide to Industries, U.S. Department of Labor (DOL). The nine DOL occupational classifications were collapsed into three categories that reflect, as much as possible, the amount of training and education required to perform that occupation. From this, the percentage of workers for each skill level was calculated by industry and was used to represent industry skill demand.

<b><i>Skill Level</i></b>	<b><i>DOL Occupational Classes</i></b>	<b><i>US Census Educational Attainment</i></b>
<b><i>High</i></b>	1 – Executive, Administrative, and Managerial 2 – Professional Specialty	Graduate or Professional Degree. Bachelor’s Degree.
<b><i>Semi</i></b>	3 – Technicians and Related Support 4 – Marketing and Sales Occupations 5 – Administrative Support, Including Clerical 6 – Precision Production, Craft, and Repair	Associate’s Degree. Some college, no degree.
<b><i>Low</i></b>	7 – Service 8 – Agriculture, Forestry, and Fishing 9 – Operators, Fabricators, and Laborers	High School Diploma/GED. Less than high school education.

County skill supply was determined using educational attainment data from the U.S. Census Bureau and projected to 1999 by Easy Analytical Software, Inc. Citizens over the age of 25 with a high school degree or less are considered low-skill. Those with some college or an Associate’s degree are considered semi-skilled. Those with at least a Bachelor’s degree are considered high-skilled.

The formula for SMI is as follows:

$$SMI_{\text{industry}} = \sum_{j=1}^3 (S_j - M_{ij})^2$$

where:

$j$  = skill level (1=High; 2=Semi; 3=Low)

$S_j$  = Percent of County Population with skill level  $j$

$M_{ij}$  = Percent of workers in industry  $i$  with skill level  $j$

It is important to note that a high mismatch between skills demanded and supplied does not necessarily imply the region has poor educational levels. It simply implies that skills of the available workforce in the region do not match that industry well.

The table below shows the SMI for selected industries in Kansas City. Appendix F provides the SMI for those industries with significant economic impact or competitive advantage.

Skills-Mismatch Index for Selected Kansas City Metro Region Industries		
SIC	Industry	SMI
792	Producers, orchestras, and entertainers	7
793	Bowling centers	7
794	Commercial sports	7
791799	Amusement and recreation services, nec	7
351	Engines and turbines	18
352	Farm and garden machinery and equipment	18
353	Construction and related machinery	18
354	Metalworking machinery and equipment	18
355	Special industry machinery	18
356	General industrial machinery and equipment	18
357	Computer and office equipment	18
358	Refrigeration and service industry machinery	18
359	Industrial machinery, nec	18
21	Tobacco products	31
371	Motor vehicles and equipment	50
372376	Aerospace	50
373	Ship and boat building and repairing	50
374	Railroad equipment	50
375379	Miscellaneous transportation equipment	50
381	Search and navigation equipment	50
382	Measuring and controlling devices	50
384	Medical equipment, instruments and supplies	50
385	Ophthalmic goods	50
386	Photographic equipment and supplies	50
387	Watches, clocks, and parts	50
271	Newspapers	61
272	Periodicals	61
273	Books	61
274	Miscellaneous publishing	61
275-276	Commercial printing and business forms	61
277	Greeting cards	61
278	Blankbooks and bookbinding	61
279	Service industries for the printing trade	61

## F. Industrial Mix

The Industrial Mix (IM) is the second component of the Shift-Share Analysis described earlier. As was mentioned during the discussion of SSA, a positive IM component indicates a fast-growing industry at the national level. When combined, a positive RS and a positive IM indicate a potential target industry. The table below indicates those industries in Kansas City that meet these two conditions. Appendix C presents the Shift-Share Analysis for all industries in Kansas City.

Kansas City Metro Shift Share Analysis 1993-1998					
SIC	Industry	NS	IM	RS	Total
48	Communications	140	87	2,120	2,347
791,799	Amusement and recreation services, nec	320	563	2,052	2,934
86	Membership organizations	208	13	461	682
371	Motor vehicles and equipment	556	465	436	1,457
45	Air Transportation	5	17	234	256
835	Child day care services	82	198	231	512
836	Residential care	90	45	211	346
792	Producers, orchestras, and entertainers	30	14	171	215
353	Construction and related machinery	53	15	92	160
833	Job training and related services	38	20	89	146
354	Metalworking machinery and equipment	48	17	85	150
359	Industrial machinery, nec	44	21	78	142
732,733,738	Miscellaneous business services	329	456	77	862
355	Special industry machinery	25	24	47	96
737	Computer and data processing services	164	549	45	758
394	Toys and sporting goods	4	2	43	50
832,839	Individual and miscellaneous social services	15	14	37	67
734	Services to buildings	178	74	37	289
344	Fabricated structural metal products	69	21	36	126
736	Personnel supply services	113	369	30	512
794	Commercial sports	5	8	29	41
735	Miscellaneous equipment rental and leasing	92	79	20	191
346	Metal forgings and stampings	30	13	15	58
494-497,%493	Water and sanitation	4	1	11	16
358	Refrigeration and service industry machinery	2	1	5	8
347	Metal coating, engraving, and allied services	9	2	4	15
731	Advertising	17	4	3	24
336	Nonferrous foundries	2	1	3	6

## G. Current Employment Levels

During the discussion of SRs, the point was raised that SRs should not be considered without also considering current employment levels. Those industries to be targeted should also have a high current level of employment in the region. To be considered high employment, the industry must be in the top one-third of all industries in the region. For the Kansas City Metro Region, an industry with at least 523 employees qualifies as having high employment by this definition.

The table below presents the largest industries in Kansas City.

Industries with High Employment in the Kansas City Metro Region			
SIC	Industry	Employment	SR
52-57,59	Rest of Retail	31,900	1.26
15-17	Construction	19,885	1.71
58	Eating & Drinking	16,244	1.42
	State and Local Government	14,754	0.64
01,02	Farm	7,613	1.91
50,51	Wholesale trade	6,691	0.67
371	Motor vehicles and equipment	5,916	4.20
791,799	Amusement and recreation services, nec	5,495	2.14
82	Educational services	4,540	1.17
806	Hospitals	4,232	0.72
801-804	Offices of health practitioners	3,899	0.81
	Federal Military	3,675	1.24
805	Nursing and personal care facilities	3,580	1.30
752-754	Automobile parking, repair, and services	3,506	1.61
732,733,738	Miscellaneous business services	3,499	0.79
48	Communications	3,472	1.60
42	Trucking	3,294	1.02
	Federal Civilian	2,932	0.76
60	Depository institutions	2,805	0.78
277	Greeting cards	2,803	65.04
308	Miscellaneous plastics products, nec	2,795	2.78
348	Ordnance and ammunition	2,711	41.04
65	Real estate	2,640	0.47
723,724	Beauty and barber shops	2,575	1.53
86	Membership organizations	2,346	0.79
88	Private households	2,132	1.25
737	Computer and data processing services	2,075	0.79
70	Hotels and other lodging places	1,885	0.69
722,729	Personal services, nec	1,847	2.29
734	Services to buildings	1,716	0.85
721,725	Laundry, cleaning, and shoe repair	1,700	1.48
63	Insurance carriers	1,609	0.63
364	Electric lighting and wiring equipment	1,432	5.88
736	Personnel supply services	1,421	0.28
64	Insurance agents, brokers, and services	1,410	0.96
874	Management and public relations	1,408	0.60
871	Engineering and architectural services	1,298	0.65
209	Miscellaneous food and kindred products	1,289	5.15
801-809	Health services, nec	1,285	0.63
07	Agricultural services	1,256	0.49
81	Legal services	1,237	0.50
835	Child day care services	1,173	0.79
836	Residential care	1,071	1.11
769	Miscellaneous repair services	1,027	1.27
735	Miscellaneous equipment rental and leasing	926	1.79
793	Bowling centers	923	5.43
352	Farm and garden machinery and equipment	884	6.27
872,.89	Accounting, auditing, and other services	858	0.42
267	Converted paper products except containers	790	2.31
41	Local&Interurban	728	0.90
40	Railroad	716	2.39
344	Fabricated structural metal products	679	1.04
275-276	Commercial printing and business forms	594	0.62
762	Electrical repair shops	588	2.00
353	Construction and related machinery	584	1.74
354	Metalworking machinery and equipment	538	1.07

### **III. Determining Target Industries**

#### **A. Conditions for Target Industries**

Industries chosen for targeting are those industries that have high scores in the six categories discussed above. For each category, a condition has been established that determines whether an industry has performed well in a category. For each category in which an industry performs well, that industry is awarded a set amount of points. If an industry does not meet the condition for that category, no points are awarded. An industry that scores well in each of the categories receives a score of 100 points, while those industries that perform poorly receive 0 points.

##### **Condition 1: High EI := $EI > -0.1$**

The primary condition is a high Economic Impact score, which is defined as an EI greater than  $-0.1$ . This includes all industries whose impacts are above average, as well as those whose impacts are slightly below average but still could make a significant contribution to the economy of the region. If an industry meets this condition, it is awarded **40** points.

##### **Condition 2: High SR := $SR > 0.9$**

The second condition is a high specialization ratio, defined as an  $SR > 0.9$ . This includes all industries whose concentrations in the region are equal to the national concentration, as well as those whose concentrations are nearly equal to the national average. If an industry meets this condition, it is awarded **20** points.

##### **Condition 3: Strong RS := $RS > 15$**

The third condition is a strong regional shift, defined as an  $RS > 15$ . This includes all industries that potentially have the greatest competitive advantage in the region. If an industry meets this condition, it is awarded **20** points.

##### **Condition 4: Low SMI := $SMI < 2,000$**

The fourth condition is a low skills-mismatch index, defined as an  $SMI < 2,000$ . This includes those industries for which the available workforce is well-suited. If an industry meets this condition, it is awarded **10** points.

##### **Condition 5: $(IM > 0) \ \& \ (RS > 0)$**

The fifth condition is a combined regional shift and industrial mix greater than zero. If an industry meets this condition, it is awarded **5** points.

**Condition 6: High Current Employment := Emp > 1,400**

The sixth condition is a high current employment level, defined as over 650 employees in the region. If an industry meets this condition, it is awarded 5 points.

<i>Category</i>	<i>Point Value</i>
<i>Condition 1: High Economic Impact</i>	<b>40</b>
<i>Condition 2: High Specialization Ratio</i>	<b>20</b>
<i>Condition 3: Strong Regional Shift</i>	<b>20</b>
<i>Condition 4: Low Skills-Mismatch</i>	<b>10</b>
<i>Condition 5: Positive Industrial Mix &amp; Regional Shift</i>	<b>5</b>
<i>Condition 6: High Current Employment</i>	<b>5</b>
<i>Total Points:</i>	<b>100</b>

**B. Kansas City Metro Region Target Industries**

The table below presents those industries with scores of 80 or higher on the target scale. Appendix H presents the scores for all industries in the Kansas City Metro Region. As the table indicates, three industries received a score of 100 in the Kansas City Metro Region. Caution should be exercised, however, toward the end of this list. Certain industries with extremely low economic impacts but high specialization ratios do score over 50 points on the targeting scale. These include certain service- and retail-sector industries.

Kansas City Metro Region Target Industries		
SIC	Industry	Total Score
353	Construction and related machinery	<b>100</b>
371	Motor vehicles and equipment	<b>100</b>
48	Communications	<b>100</b>
352	Farm and garden machinery and equipment	<b>95</b>
355	Special industry machinery	<b>95</b>
267	Converted paper products except containers	<b>95</b>
356	General industrial machinery and equipment	<b>90</b>
14	Nonmetallic minerals, except fuels	<b>90</b>
346	Metal forgings and stampings	<b>75</b>
364	Electric lighting and wiring equipment	<b>75</b>
209	Miscellaneous food and kindred products	<b>75</b>
40	Railroad	<b>75</b>
45	Air Transportation	<b>75</b>
60	Depository institutions	<b>75</b>
64	Insurance agents, brokers, and services	<b>75</b>

### **C. Comparison of TM2 and Target Missouri**

TM2 has provided a list of 84 industries that have the best potential for economic development in Kansas City. The original Target Missouri provided a list of only 34 target industries for the entire Kansas City Metro Region. Of these, only 22 appear on both lists, so in this case, the two studies have obtained somewhat different results. The expanded list generated by TM2 provides a list of industries that better fits the specifics of Kansas City, as well as providing rankings that shed some light on the relative importance of certain industries.

### **IV. Limitations of Analysis**

A few limitations of the methods of analysis employed do exist. The first limitation appears in the economic impact study. The REMI model used for this analysis can only calculate impacts of 53 industrial sectors that approximate 2-digit level SIC codes. Because of the amount of aggregation involved, the effects of many of the 3-digit level SICs are somewhat masked. For example, SIC 73, Miscellaneous Business Services, has a relatively low impact score of -0.72. However, the possible high impact of the increasingly important SIC 737, Computer Programming and Data Services, are masked within the larger group. The same problem exists with the 170-sector data REMI uses for the baseline model, but not quite to the degree of the impact model.

Further, the structure of the REMI model does not allow for the construction of hybrid industries that stretch across several SICs. These new industries include such things as Life Sciences, Telecommunications, and Tourism. Current literature suggests that industries such as these will be playing an ever-increasing role in economic development.

Another limitation is the availability of data. The last history year for the REMI model currently in use is 1997. (Data for 1998 are actually the first year projected by the REMI model.) While this seems like a significant lag, this is the most recent data available from most government entities.

A further complication is the impending switch from SIC codes to the more modern NAIC codes. While not having a direct bearing on this analysis, future analyses may have to be done in a slightly different manner.

A fourth limitation lies within the Shift-Share Analysis. There is some disagreement among economic development experts as to the value of SSA, due to the limitations discussed in the SSA section. However, economic development practitioners agree that when used in combination with other tools, SSA does have merit. Another limitation concerning SSA in regard to TM2 is that only Employment is considered. It is likely that interesting data might be uncovered should SSA be applied to Wage or Gross Product data.

Finally, TM2 does not attempt to address infrastructure needs beyond the issues of current capacity within the labor force raised in the “Recommendations for Targeting”

section. Clearly, issues such as access to transportation and utilities are major factors when companies consider relocation or expansion.

## **V. Future Considerations**

Eventually, analogous studies will be completed for the other fourteen regions in the state. At the completion of these studies, the Statewide Economic Index referenced in the EI section can be used to help determine the best policies for the state to develop. The Statewide study, the top of the “bottom-up” approach utilized by TM2, will indicate not only which industries hold the most promise for future prosperity in Missouri, but also where these industries should be located to contribute the greatest return for the economy of the state.

It is likely that future studies will shed some light on the differences of the needs between rural and urban areas in the state. For instance, the Central Region is for the most part rural, and many of the Recommended Target industries are manufacturing industries. This may or may not be the case in the urban regions. Also, differences between urban areas and their respective metro areas are expected, due to the differing demographic factors involved.

Finally, another future consideration is the concept of industry clusters introduced in the original Target Missouri study. Industry clusters are those industries linked by such things as common suppliers, common customers, and common labor needs. While perhaps not as relevant at a regional level, the idea of linkages between industries and regions is clearly important at a statewide level.

## **VI. Appendices**

### **Appendix A. Information Concerning the REMI Model**

The REMI Missouri Multi-Regional Model, produced by Regional Economic Models, Inc. of Amherst, MA, is a comprehensive economic forecasting and policy analysis model. The model incorporates a complete economic history of the state and forecast data specific to Missouri and fifteen individual economic regions within the state. The model also has thousands of policy variables that can be used to show the effects of a broad range of economic development policies. The dynamic properties of the model show medium and long-term effects, in addition to short-term effects, on the economy of Missouri.

## Appendix B. Specialization Ratios

Specialization Ratios in the Kansas City Metro Region			
SIC	Industry	Employment	SR
277	Greeting cards	2,803	65.04
348	Ordnance and ammunition	2,711	41.04
352	Farm and garden machinery and equipment	884	6.27
364	Electric lighting and wiring equipment	1,432	5.88
793	Bowling centers	923	5.43
209	Miscellaneous food and kindred products	1,289	5.15
324	Hydraulic cement	122	4.92
371	Motor vehicles and equipment	5,916	4.20
308	Miscellaneous plastics products, nec	2,795	2.78
40	Railroad	716	2.39
763-764	Watch, jewelry, & furniture repair	337	2.37
267	Converted paper products except containers	790	2.31
204,207	Grain mill products and fats and oils	506	2.31
722,729	Personal services, nec	1,847	2.29
791,799	Amusement and recreation services, nec	5,495	2.14
762	Electrical repair shops	588	2.00
302,305,306	Rubber products and plastic hose and footwear	519	1.99
01,02	Farm	7,613	1.91
735	Miscellaneous equipment rental and leasing	926	1.79
353	Construction and related machinery	584	1.74
343	Plumbing and nonelectric heating equipment	140	1.72
15-17	Construction	19,885	1.71
287	Agricultural chemicals	118	1.64
752-754	Automobile parking, repair, and services	3,506	1.61
48	Communications	3,472	1.60
723,724	Beauty and barber shops	2,575	1.53
721,725	Laundry, cleaning, and shoe repair	1,700	1.48
726	Funeral service and crematories	324	1.46
239	Miscellaneous fabricated textile products	461	1.43
58	Eating & Drinking	16,244	1.42
265	Paperboard containers and boxes	419	1.36
244,249	Wood containers and misc. wood products	324	1.34
14	Nonmetallic minerals, except fuels	267	1.32
805	Nursing and personal care facilities	3,580	1.30
769	Miscellaneous repair services	1,027	1.27
52-57,59	Rest of Retail	31,900	1.26
88	Private households	2,132	1.25
	Federal Military	3,675	1.24
393,395,396,399	Manufactured products, nec	455	1.21
327	Concrete, gypsum, & plaster products	374	1.20
784	Video tape rental	340	1.20
751	Automotive rentals, without drivers	393	1.17
82	Educational services	4,540	1.17
362	Electrical industrial apparatus	250	1.15
366	Communications equipment	459	1.14
355	Special industry machinery	296	1.13
836	Residential care	1,071	1.11
354	Metalworking machinery and equipment	538	1.07
833	Job training and related services	449	1.05
344	Fabricated structural metal products	679	1.04
42	Trucking	3,294	1.02
356	General industrial machinery and equipment	367	1.00
243	Millwork, plywood, and structural members	449	0.99
359	Industrial machinery, nec	492	0.99
374	Railroad equipment	56	0.97
64	Insurance agents, brokers, and services	1,410	0.96

Specialization Ratios in the Kansas City Metro Region			
SIC	Industry	Employment	SR
41	Local&Interurban	728	0.90
273	Books	183	0.88
734	Services to buildings	1,716	0.85
349	Miscellaneous fabricated metal products	299	0.83
801-804	Offices of health practitioners	3,899	0.81
346	Metal forgings and stampings	295	0.81
86	Membership organizations	2,346	0.79
835	Child day care services	1,173	0.79
737	Computer and data processing services	2,075	0.79
732,733,738	Miscellaneous business services	3,499	0.79
205	Bakery products	227	0.79
792	Producers, orchestras, and entertainers	456	0.78
295,299	Miscellaneous petroleum and coal products	43	0.78
60	Depository institutions	2,805	0.78
	Federal Civilian	2,932	0.76
242	Sawmills and planing mills	203	0.73
806	Hospitals	4,232	0.72
301	Tires and inner tubes	78	0.70
70	Hotels and other lodging places	1,885	0.69
50,51	Wholesale trade	6,691	0.67
46	Pipelines, except natural gas	16	0.66
208	Beverages	155	0.66
871	Engineering and architectural services	1,298	0.65
	State and Local Government	14,754	0.64
63	Insurance carriers	1,609	0.63
801-809	Health services, nec	1,285	0.63
275-276	Commercial printing and business forms	594	0.62
874	Management and public relations	1,408	0.60
203	Preserved fruits and vegetables	184	0.57
341	Metal cans and shipping containers	28	0.53
473,474,478	Miscellaneous transportation services	201	0.52
81	Legal services	1,237	0.50
07	Agricultural services	1,256	0.49
21	Tobacco products	28	0.49
65	Real estate	2,640	0.47
345	Screw machine products, bolts, rivets, etc.	66	0.47
347	Metal coating, engraving, and allied services	87	0.46
369	Miscellaneous electrical equipment	98	0.45
394	Toys and sporting goods	86	0.42
872,.89	Accounting, auditing, and other services	858	0.42
367	Electronic components and accessories	339	0.42
201	Meat products	270	0.40
781-783	Motion pictures	259	0.38
357	Computer and office equipment	191	0.38
311,315-317,319	Luggage, handbags, and leather products, nec	24	0.37
231-238	Apparel	308	0.36
331	Blast furnaces and basic steel products	115	0.36
202	Dairy products	68	0.35
252,253,259	Office and misc. furniture and fixtures	77	0.32
325,326,328,329	Stone, clay, and misc. mineral products	80	0.32
271	Newspapers	214	0.32
731	Advertising	161	0.32
386	Photographic equipment and supplies	37	0.32
736	Personnel supply services	1,421	0.28
794	Commercial sports	78	0.27
61,67	Nondepository; holding and investment offices	459	0.27

Specialization Ratios in the Kansas City Metro Region			
SIC	Industry	Employment	SR
342	Cutlery, hand tools, and hardware	47	0.27
241	Logging	49	0.27
334,339	All other primary metals	16	0.27
261-263	Pulp, paper, and paperboard mills	77	0.25
491,%493	Electric utilities	146	0.22
381	Search and navigation equipment	48	0.21
472	Passenger transportation arrangement	86	0.21
289	Miscellaneous chemical products	26	0.20
336	Nonferrous foundries	25	0.20
274	Miscellaneous publishing	27	0.20
45	Air Transportation	293	0.18
492,%493	Gas utilities	43	0.17
321-323	Glass and glass products	35	0.17
832,839	Individual and miscellaneous social services	190	0.15
873	Research and testing services	188	0.15
279	Service industries for the printing trade	12	0.15
278	Blankbooks and bookbinding	15	0.14
84	Museums, botanical, zoological gardens	17	0.14
494-497,%493	Water and sanitation	49	0.14
351	Engines and turbines	14	0.12
385	Ophthalmic goods	6	0.12
332	Iron and steel foundries	21	0.12
365	Household audio and video equipment	8	0.11
284	Soap, cleaners, and toilet goods	22	0.10
358	Refrigeration and service industry machinery	27	0.09
254	Partitions and fixtures	13	0.09
44	Water transportation	27	0.09
285	Paints and allied products	6	0.08
313,314	Footwear, except rubber and plastic	4	0.07
62	Security and commodity brokers	96	0.07
131,132	Crude petroleum, natural gas and gas liquids	14	0.06
391	Jewelry, silverware, and plated ware	5	0.05
372,376	Aerospace	41	0.05
361	Electric distribution equipment	6	0.05
272	Periodicals	9	0.04
251	Household furniture	15	0.04
384	Medical equipment, instruments and supplies	14	0.04
282	Plastics materials and synthetics	7	0.03
206	Sugar and confectionery products	4	0.03
283	Drugs	10	0.03
373	Ship and boat building and repairing	5	0.02
229	Miscellaneous textile goods	1	0.01
281,286	Industrial chemicals	5	0.01
08,09	Forestry, fishing, hunting, & trapping	2	0.01
375,379	Miscellaneous transportation equipment	1	0.01
382	Measuring and controlling devices	3	0.01
138	Oil and gas field services	2	0.01
221-224,226,228	Weaving, finishing, yarn, and thread mills	1	0.00
245	Wood buildings and mobile homes	0	0.00
333	Primary nonferrous smelting & refining	0	0.00
335	Nonferrous rolling and drawing	0	0.00
363	Household appliances	0	0.00
387	Watches, clocks, and parts	0	0.00
225	Knitting mills	0	0.00
227	Carpets and rugs	0	0.00
291	Petroleum refining	0	0.00

## Appendix C. Kansas City Metro Region Shift Share Analysis

Kansas City Metro Shift Share Analysis 1993-1998					
SIC	Industry	NS	IM	RS	Total
241	Logging	8	-8	-12	-12
242	Sawmills and planing mills	31	-26	-48	-43
243	Millwork, plywood, and structural members	58	34	-106	-14
244,249	Wood containers and misc. wood products	45	-9	-76	-39
245	Wood buildings and mobile homes	0	0		
251	Household furniture	9	-11	-51	-54
254	Partitions and fixtures	6	6	-45	-33
252,253,259	Office and misc. furniture and fixtures	38	1	-265	-226
321-323	Glass and glass products	5	-7	-3	-5
324	Hydraulic cement	18	-24	-14	-20
325,326,328,329	Stone, clay, and misc. mineral products	11	-6	-9	-5
327	Concrete, gypsum, & plaster products	46	5	-42	9
331	Blast furnaces and basic steel products	13	-14	14	13
332	Iron and steel foundries	2	-1	3	4
333	Primary nonferrous smelting & refining	0	0		
334,339	All other primary metals	2	-1	2	3
335	Nonferrous rolling and drawing	0	0		
336	Nonferrous foundries	2	1	3	6
341	Metal cans and shipping containers	4	-8	1	-3
342	Cutlery, hand tools, and hardware	5	-5	3	3
343	Plumbing and nonelectric heating equipment	16	-12	7	11
344	Fabricated structural metal products	69	21	36	126
345	Screw machine products, bolts, rivets, etc.	7	-1	3	9
346	Metal forgings and stampings	30	13	15	58
347	Metal coating, engraving, and allied services	9	2	4	15
348	Ordnance and ammunition	396	-997	139	-462
349	Miscellaneous fabricated metal products	32	-4	16	44
351	Engines and turbines	2	-2	1	1
352	Farm and garden machinery and equipment	90	-68	140	162
353	Construction and related machinery	53	15	92	160
354	Metalworking machinery and equipment	48	17	85	150
355	Special industry machinery	25	24	47	96
356	General industrial machinery and equipment	35	-10	59	84
357	Computer and office equipment	20	-19	30	31
358	Refrigeration and service industry machinery	2	1	5	8
359	Industrial machinery, nec	44	21	78	142
361	Electric distribution equipment	1	-1	-1	-1
362	Electrical industrial apparatus	39	-31	-73	-65
363	Household appliances	0	0		
364	Electric lighting and wiring equipment	225	-177	-416	-368
365	Household audio and video equipment	2	-8	-2	-8
366	Communications equipment	61	43	-134	-30
367	Electronic components and accessories	49	-3	-98	-53
369	Miscellaneous electrical equipment	15	-10	-29	-24
371	Motor vehicles and equipment	556	465	436	1,457
372,376	Aerospace	6	-10	-1	-5
373	Ship and boat building and repairing	1	0	0	0
374	Railroad equipment	5	10	0	15
375,379	Miscellaneous transportation equipment	0	0		
381	Search and navigation equipment	2	-4	37	34
382	Measuring and controlling devices	0	0	2	2
384	Medical equipment, instruments and supplies	0	0	11	11
385	Ophthalmic goods	0	0	5	5
386	Photographic equipment and supplies	1	-2	28	28

Kansas City Metro Shift Share Analysis 1993-1998					
SIC	Industry	NS	IM	RS	Total
387	Watches, clocks, and parts	0	0		
391	Jewelry, silverware, and plated ware	0	-1	2	2
394	Toys and sporting goods	4	2	43	50
393,395,396,399	Manufactured products, nec	26	-5	228	249
201	Meat products	31	-6	-3	22
202	Dairy products	9	-16	0	-7
203	Preserved fruits and vegetables	24	-31	-2	-9
204,207	Grain mill products and fats and oils	64	-63	-6	-5
205	Bakery products	29	-33	-2	-6
206	Sugar and confectionery products	0	-1	0	0
208	Beverages	20	-25	-2	-7
209	Miscellaneous food and kindred products	166	-193	-13	-40
21	Tobacco products	2	-3	14	13
221-224,226,228	Weaving, finishing, yarn, and thread mills	1	-3	-10	-11
225	Knitting mills	0	0	-1	-1
227	Carpets and rugs	0	0		
229	Miscellaneous textile goods	1	-1	-5	-5
231-238	Apparel	61	-181	-63	-183
239	Miscellaneous fabricated textile products	65	-30	-94	-59
261-263	Pulp, paper, and paperboard mills	9	-12	6	3
265	Paperboard containers and boxes	46	-25	29	50
267	Converted paper products except containers	89	-72	56	73
271	Newspapers	25	-23	12	14
272	Periodicals	1	0	0	1
273	Books	20	-3	10	26
274	Miscellaneous publishing	3	-1	1	3
275-276	Commercial printing and business forms	65	-23	32	74
277	Greeting cards	317	-208	150	259
278	Blankbooks and bookbinding	2	-2	1	1
279	Service industries for the printing trade	1	-2	1	0
281,286	Industrial chemicals	2	-4	-14	-15
282	Plastics materials and synthetics	4	-5	-21	-22
283	Drugs	5	-4	-31	-30
284	Soap, cleaners, and toilet goods	11	-9	-65	-63
285	Paints and allied products	3	-5	-18	-20
287	Agricultural chemicals	61	-85	-345	-369
289	Miscellaneous chemical products	13	-12	-78	-77
291	Petroleum refining	0	0		
295,299	Miscellaneous petroleum and coal products	6	-5	-11	-9
301	Tires and inner tubes	9	-9	4	4
302,305,306	Rubber products and plastic hose and footwear	56	-13	24	67
308	Miscellaneous plastics products, nec	297	-10	130	417
313314	Footwear, except rubber and plastic	2	-9	-7	-14
311,315-317,319	Luggage, handbags, and leather products, nec	9	-20	-39	-50
10	Metal mining	0	0		
12	Coal mining	0	0		
131,132	Crude petroleum, natural gas and gas liquids	2	-8	3	-3
138	Oil and gas field services	0	0	1	1
14	Nonmetallic minerals, except fuels	29	-41	50	38
15-17	Construction	2,293	1,685	-2,473	1,505
40	Railroad	107	-173	-77	-143
42	Trucking	424	-266	-261	-103
41	Local&Interurban	74	63	0	137
45	Air Transportation	5	17	234	256
44	Water transportation	12	-3	-76	-67
46	Pipelines, except natural gas	9	-23	-44	-58
472	Passenger transportation arrangement	35	16	-245	-194
473,474,478	Miscellaneous transportation services	72	123	-575	-380
48	Communications	140	87	2,120	2,347

Kansas City Metro Shift Share Analysis 1993-1998					
SIC	Industry	NS	IM	RS	Total
491,%493	Electric utilities	16	-30	30	16
492,%493	Gas utilities	5	-9	9	5
494-497,%493	Water and sanitation	4	1	11	16
60	Depository institutions	278	-226	522	574
63	Insurance carriers	280	-182	-735	-637
64	Insurance agents, brokers, and services	238	-92	-643	-497
61,67	Nondepository; holding and investment offices	39	145	-36	148
62	Security and commodity brokers	7	36	-7	36
65	Real estate	241	-66	535	710
58	Eating & Drinking	1,910	291	-1,265	936
52-57,59	Rest of Retail	4,361	826	-8,241	-3,055
50,51	Wholesale trade	959	-97	-1,854	-993
70	Hotels and other lodging places	202	-17	77	263
721,725	Laundry, cleaning, and shoe repair	201	-107	-7	87
722,729	Personal services, nec	187	173	-9	351
723,724	Beauty and barber shops	294	-64	-11	219
726	Funeral service and crematories	34	16	-1	49
762	Electrical repair shops	69	-34	-2	33
763-764	Watch, jewelry, & furniture repair	42	-37	-1	4
769	Miscellaneous repair services	118	-28	-5	85
88	Private households	303	-595	-7	-299
751	Automotive rentals, without drivers	40	36	-6	71
752-754	Automobile parking, repair, and services	358	326	-52	633
731	Advertising	17	4	3	24
734	Services to buildings	178	74	37	289
735	Miscellaneous equipment rental and leasing	92	79	20	191
736	Personnel supply services	113	369	30	512
737	Computer and data processing services	164	549	45	758
732,733,738	Miscellaneous business services	329	456	77	862
792	Producers, orchestras, and entertainers	30	14	171	215
793	Bowling centers	73	-84	345	334
794	Commercial sports	5	8	29	41
791,799	Amusement and recreation services, nec	320	563	2,052	2,934
781-783	Motion pictures	40	98	-196	-59
784	Video tape rental	58	76	-257	-123
801-804	Offices of health practitioners	461	113	-374	200
805	Nursing and personal care facilities	421	132	-345	208
806	Hospitals	554	-356	-407	-209
801-809	Health services, nec	127	262	-125	265
81	Legal services	147	-62	-30	55
871	Engineering and architectural services	138	84	-31	191
873	Research and testing services	22	-9	-5	9
874	Management and public relations	129	278	-34	373
872,879	Accounting, auditing, and other services	99	-13	-20	65
82	Educational services	497	-14	77	560
832,839	Individual and miscellaneous social services	15	14	37	67
833	Job training and related services	38	20	89	146
835	Child day care services	82	198	231	512
836	Residential care	90	45	211	346
84	Museums, botanical, zoological gardens	1	0	3	5
86	Membership organizations	208	13	461	682
07	Agricultural services	172	197	-492	-123
08,09	Forestry, fishing, hunting, & trapping	0	-1	0	-1
	State and Local Government	1,634	-808	828	1,654
	Federal Civilian	391	-606	10	-204
	Federal Military	392	-833	977	535
01,02	Farm	991	-1,231	-90	-330
<b>Total</b>		<b>25,371</b>	<b>0</b>	<b>-10,747</b>	<b>14,624</b>

## Appendix D. Economic impacts of 100 New Jobs in Specific Industries

Economic Impact of 100 New Jobs				
Kansas City Metro Region				
Industry Group			Regional Impact	
SIC	Sector	Average Annual Salary	Employment	Wages and Salaries
24	Lumber	\$21,335	129	\$12,490,845
25	Furniture	\$34,974	155	\$19,638,195
32	Stone,Clay,Etc	\$38,840	196	\$26,899,859
33	Primary Metals	\$45,701	205	\$31,413,434
34	Fabricated Metals	\$42,345	158	\$23,812,666
35	Machinery & Computers	\$42,464	197	\$30,094,395
36	Electrical Equipment	\$41,605	174	\$27,290,477
371	Motor Vehicles	\$59,643	258	\$43,840,506
372-379	Rest of Transportation Equipment	\$67,988	205	\$39,359,433
38	Instruments	\$58,603	176	\$31,176,940
39	Misc. Manufacturing	\$25,677	138	\$16,086,611
20	Food	\$55,936	193	\$28,145,910
21	Tobacco Manufacturing*	\$3,895	178	\$17,999,333
22	Textiles	\$37,678	141	\$14,414,028
23	Apparel	\$30,138	163	\$17,532,349
26	Paper	\$55,908	185	\$28,141,411
27	Printing	\$51,555	159	\$23,714,754
28	Chemicals	\$109,370	308	\$52,179,235
29	Petroleum Products	\$65,402	504	\$72,676,944
30	Rubber	\$46,687	166	\$22,343,116
31	Leather	\$36,026	149	\$17,490,121
10,12-14	Mining	\$44,645	274	\$33,024,720
15-17	Construction	\$30,941	145	\$17,990,434
40	Railroad	\$56,622	473	\$73,497,172
42	Trucking	\$22,210	152	\$16,598,042

Economic Impact of 100 New Jobs				
Kansas City Metro Region				
Industry Group			Regional Impact	
SIC	Sector	Average Annual Salary	Employment	Wages and Salaries
41	Local/Interurban Transportation	\$13,675	98	\$5,430,758
45	Air Transportation	\$34,387	176	\$25,881,347
44,46,47	Other Transportation	\$25,305	187	\$24,192,794
48	Communications	\$44,189	323	\$50,162,460
49	Public Utilities	\$48,964	597	\$78,871,383
60	Banking	\$42,621	204	\$27,993,795
63,64	Insurance	\$37,394	192	\$26,979,256
61,62,67	Credit & Finance	\$42,251	176	\$26,816,323
65	Real Estate	\$11,832	129	\$9,417,480
58	Eating & Drinking	\$11,640	114	\$8,680,875
52-57,59	Rest of Retail	\$17,037	121	\$11,315,026
50,51	Wholesale	\$49,800	174	\$24,577,855
70	Hotels	\$18,697	148	\$15,211,167
72,76	Personal Services & Repair Services	\$11,866	113	\$8,563,346
88	Private Households	\$11,060	98	\$6,542,577
75	Auto Repair, Service	\$22,408	175	\$18,661,459
73	Misc. Business Services	\$23,061	127	\$15,074,762
79	Amusement & Recreation	\$22,095	133	\$14,834,081
78	Motion Pictures	\$15,612	119	\$10,758,633
80	Medical	\$37,461	125	\$19,310,828
81,87,89	Misc. Professional	\$31,610	147	\$21,669,833
82	Education	\$24,511	123	\$14,959,382
83,84,86	Non-Profit Org.'s	\$21,685	110	\$11,786,884
07-09	Agriculture, Forestry, &	\$11,690	103	\$6,394,906

\*State Average for Annual Salary, instead of Regional Average

**Employment** is average of total new employment over 5 years

**Wages and Salaries** is Net Present Value of Increase over 5 years

**Gross State Revenue** is Net Present Value of Increase over 5 years

**Appendix E. Economic Impact of Scores Sorted by Average Score**

Impact Z-Scores by Industry				
Kansas City Metro Region				
Industry Group		Regional Impact		
SIC	Sector	Total Employment	Wages and Salaries	Average Score
24	Lumber	-0.51	-0.71	-0.61
25	Furniture	-0.25	-0.27	-0.26
32	Stone,Clay,Etc	0.15	0.16	0.16
33	Primary Metals	0.24	0.43	0.34
34	Fabricated Metals	-0.23	-0.02	-0.13
35	Machinery & Computers	0.16	0.35	0.26
36	Electrical Equipment	-0.07	0.19	0.06
371	Motor Vehicles	0.77	1.18	0.98
372-379	Rest of Transportation Equipment	0.24	0.91	0.57
38	Instruments	-0.05	0.42	0.19
39	Misc. Manufacturing	-0.43	-0.49	-0.46
20	Food	0.12	0.24	0.18
21	Tobacco Manufacturing*	-0.03	-0.37	-0.20
22	Textiles	-0.40	-0.59	-0.49
23	Apparel	-0.18	-0.40	-0.29
26	Paper	0.04	0.24	0.14
27	Printing	-0.22	-0.03	-0.12
28	Chemicals	1.26	1.68	1.47
29	Petroleum Products	3.22	2.92	3.07
30	Rubber	-0.15	-0.11	-0.13
31	Leather	-0.32	-0.40	-0.36
10,12-14	Mining	0.93	0.53	0.73
15-17	Construction	-0.35	-0.37	-0.36
40	Railroad	2.91	2.97	2.94
42	Trucking	-0.29	-0.46	-0.37

Impact Z-Scores by Industry				
Kansas City Metro Region				
Industry Group		Regional Impact		
SIC	Sector	Total Employment	Wages and Salaries	Average Score
41	Local/Interurban Transportation	-0.82	-1.13	-0.98
45	Air Transportation	-0.04	0.10	0.03
44,46,47	Other Transportation	0.06	0.00	0.03
48	Communications	1.42	1.56	1.49
49	Public Utilities	4.15	3.29	3.72
60	Banking	0.23	0.23	0.23
63,64	Insurance	0.11	0.17	0.14
61,62,67	Credit & Finance	-0.05	0.16	0.06
65	Real Estate	-0.52	-0.89	-0.70
58	Eating & Drinking	-0.67	-0.93	-0.80
52-57,59	Rest of Retail	-0.59	-0.78	-0.68
50,51	Wholesale	-0.06	0.02	-0.02
70	Hotels	-0.33	-0.54	-0.43
72,76	Personal Services & Repair Services	-0.67	-0.94	-0.81
88	Private Households	-0.82	-1.06	-0.94
75	Auto Repair, Service	-0.05	-0.33	-0.19
73	Misc. Business Services	-0.54	-0.55	-0.54
79	Amusement & Recreation	-0.48	-0.56	-0.52
78	Motion Pictures	-0.62	-0.81	-0.71
80	Medical	-0.56	-0.29	-0.43
81,87,89	Misc. Professional Services	-0.34	-0.15	-0.25
82	Education	-0.58	-0.56	-0.57
83,84,86	Non-Profit Org.'s	-0.70	-0.75	-0.73
07-09	Agriculture, Forestry, & Fishery Services	-0.78	-1.07	-0.92

**Average Score** is the Average of the Z-scores in that Geographical Area.

## Appendix F. Skills Mismatch Index for Selected Kansas City Region Industries

Kansas City Metro Region Skills Mismatch Index		
SIC	Industry	SMI
792	Producers, orchestras, and entertainers	7
793	Bowling centers	7
794	Commercial sports	7
791,799	Amusement and recreation services, nec	7
351	Engines and turbines	18
352	Farm and garden machinery and equipment	18
353	Construction and related machinery	18
354	Metalworking machinery and equipment	18
355	Special industry machinery	18
356	General industrial machinery and equipment	18
357	Computer and office equipment	18
358	Refrigeration and service industry machinery	18
359	Industrial machinery, nec	18
21	Tobacco products	31
371	Motor vehicles and equipment	50
372,376	Aerospace	50
373	Ship and boat building and repairing	50
374	Railroad equipment	50
375,379	Miscellaneous transportation equipment	50
381	Search and navigation equipment	50
382	Measuring and controlling devices	50
384	Medical equipment, instruments and supplies	50
385	Ophthalmic goods	50
386	Photographic equipment and supplies	50
387	Watches, clocks, and parts	50
271	Newspapers	61
272	Periodicals	61
273	Books	61
274	Miscellaneous publishing	61
275-276	Commercial printing and business forms	61
277	Greeting cards	61
278	Blankbooks and bookbinding	61
279	Service industries for the printing trade	61
281,286	Industrial chemicals	118
282	Plastics materials and synthetics	118
283	Drugs	118
284	Soap, cleaners, and toilet goods	118
285	Paints and allied products	118
287	Agricultural chemicals	118
289	Miscellaneous chemical products	118
361	Electric distribution equipment	139
362	Electrical industrial apparatus	139
363	Household appliances	139
364	Electric lighting and wiring equipment	139
365	Household audio and video equipment	139
366	Communications equipment	139
367	Electronic components and accessories	139
369	Miscellaneous electrical equipment	139
331	Blastfurnaces and basic steel products	194
332	Iron and steel foundries	194
333	Primary nonferrous smelting & refining	194
334,339	All other primary metals	194
335	Nonferrous rolling and drawing	194
336	Nonferrous foundries	194
341	Metal cans and shipping containers	251

## Appendix G. Target Scores for All Kansas City Region Industries

Appendix H. Kansas City Metro Region Target Industries															
SIC	Industry	Values						Scores						Total Score	
		EI	SR	RS	SMI	IM	CE	EI	SR	RS	SMI	IM	CE		
241	Logging	-0.61	0.27	-12	7	-8	49	0	0	0	10	0	0	10	
242	Sawmills and planing mills	-0.61	0.73	-48	7	-26	203	0	0	0	10	0	0	10	
243	Millwork, plywood, and structural members	-0.61	0.99	-106	7	34	449	0	20	0	10	0	0	30	
244, 249	Wood containers and misc. wood products	-0.61	1.34	-70	7	-9	324	0	20	0	10	0	0	30	
245	Wood buildings and mobile homes	-0.61	0.00		18	0	0	0	0	0	10	0	0	10	
251	Household furniture	-0.26	0.04	-51	18	-11	15	0	0	0	10	0	0	10	
254	Partitions and fixtures	-0.26	0.09	-45	18	6	13	0	0	0	10	0	0	10	
252, 253, 259	Office and misc. furniture and fixtures	-0.01	0.32	-265	18	1	77	40	0	0	10	0	0	50	
321-323	Glass and glass products	-0.21	0.17	-3	18	-7	35	0	0	0	10	0	0	10	
324	Hydraulic cement	0.16	4.92	-14	18	-24	122	40	20	0	10	0	0	70	
325, 326, 328, 329	Stone, clay, and misc. mineral products	-0.27	0.32	-9	18	-6	80	0	0	0	10	0	0	10	
327	Concrete, gypsum, & plaster products	-0.08	1.20	-42	18	5	374	40	20	0	10	0	0	70	
331	Blast furnaces and basic steel products	-0.34	0.36	14	18	-14	115	0	0	0	10	0	0	10	
332	Iron and steel foundries	0.34	0.12	3	31	-1	21	40	0	0	10	0	0	50	
333	Primary nonferrous smelting & refining	0.34	0.00		50	0	0	40	0	0	10	0	0	50	
334, 339	All other primary metals	0.34	0.27	2	50	-1	16	40	0	0	10	0	0	50	
335	Nonferrous rolling and drawing	0.34	0.00		50	0	0	40	0	0	10	0	0	50	
336	Nonferrous foundries	-0.34	0.20	3	50	1	25	0	0	0	10	5	0	15	
341	Metal cans and shipping containers	0.11	0.53	1	50	-8	28	40	0	0	10	0	0	50	
342	Cutlery, hand tools, and hardware	0.11	0.27	3	50	-5	47	40	0	0	10	0	0	50	
343	Plumbing and nonelectric heating equipment	-0.13	1.72	7	50	-12	140	0	20	0	10	0	0	30	
344	Fabricated structural metal products	-0.13	1.04	36	50	21	679	0	20	20	10	5	5	60	
345	Screw machine products, bolts, rivets, etc.	-0.13	0.47	3	50	-1	66	0	0	0	10	0	0	10	
346	Metal forgings and stampings	0.11	0.81	15	50	13	295	40	0	20	10	5	0	75	
347	Metal coating, engraving, and allied services	-0.13	0.46	4	50	2	87	0	0	0	10	5	0	15	
348	Ordinance and ammunition	-0.13	41.04	139	61	-997	2,711	0	20	20	10	0	5	55	
349	Miscellaneous fabricated metal products	0.11	0.83	16	61	-4	299	40	0	20	10	0	0	70	
351	Engines and turbines	0.26	0.12	1	61	-2	14	40	0	0	10	0	0	50	
352	Farm and garden machinery and equipment	0.26	6.27	140	61	-68	884	40	20	20	10	0	5	95	
353	Construction and related machinery	0.26	1.74	92	61	15	584	40	20	20	10	5	5	100	
354	Metalworking machinery and equipment	-0.34	1.07	85	61	17	538	0	20	20	10	5	5	60	
355	Special industry machinery	0.26	1.13	47	61	24	296	40	20	20	10	5	0	95	
356	General industrial machinery and equipment	-0.02	1.00	59	61	-10	367	40	20	20	10	0	0	90	
357	Computer and office equipment	0.26	0.38	30	118	-19	191	40	0	20	10	0	0	70	
358	Refrigeration and service industry machinery	0.26	0.09	5	118	1	27	40	0	0	10	5	0	55	
359	Industrial machinery, nec.	0.25	0.99	78	118	21	492	0	20	20	10	5	0	55	
361	Electric distribution equipment	0.06	0.05	-1	118	-1	6	40	0	0	10	0	0	50	
362	Electrical industrial apparatus	0.06	1.15	-73	118	-31	250	40	20	0	10	0	0	70	
363	Household appliances	0.06	0.00		118	0	0	40	0	0	10	0	0	50	
364	Electric lighting and wiring equipment	-0.07	5.88	-416	118	-177	1,432	40	20	0	10	0	5	75	
365	Household audio and video equipment	0.06	0.11	-2	139	-8	8	40	0	0	10	0	0	50	
366	Communications equipment	0.06	1.14	-134	139	-43	459	40	20	0	10	0	0	70	
367	Electronic components and accessories	0.06	0.42	-99	139	-3	239	40	0	0	10	0	0	50	
369	Miscellaneous electrical equipment	0.06	0.45	-29	139	-10	98	40	0	0	10	0	0	50	
371	Motor vehicles and equipment	0.98	4.20	436	139	465	5,916	40	20	20	10	5	5	100	
372, 376	Aerospace	-0.13	0.05	-1	139	-10	41	0	0	0	10	0	0	10	
373	Ship and boat building and repairing	0.57	0.02	0	139	0	5	40	0	0	10	0	0	50	
374	Railroad equipment	0.57	0.97	0	139	10	56	40	20	0	10	0	0	70	
375, 379	Miscellaneous transportation equipment	0.57	0.01		194	0	1	40	0	0	10	0	0	50	
381	Search and navigation equipment	0.19	0.21	37	194	-4	48	40	0	20	10	0	0	70	
382	Measuring and controlling devices	0.19	0.01	2	194	0	3	40	0	0	10	0	0	50	
384	Medical equipment, instruments and supplies	0.19	0.04	11	194	0	14	40	0	0	10	0	0	50	
385	Ophthalmic goods	0.19	0.12	5	194	0	6	40	0	0	10	0	0	50	
386	Photographic equipment and supplies	0.19	0.32	28	194	-2	37	40	0	20	10	0	0	70	
387	Watches, clocks, and parts	0.19	0.00		251	0	0	40	0	0	10	0	0	50	
391	Jewelry, silverware, and plated ware	-0.46	0.05	2	251	-1	5	0	0	0	10	0	0	10	
394	Toys and sporting goods	-0.46	0.42	43	251	2	86	0	0	20	10	5	0	35	
393, 395, 396, 399	Manufactured products, nec.	-0.46	1.21	228	251	-5	455	0	20	20	10	0	0	50	

Appendix H. Kansas City Metro Region Target Industries															
SIC	Industry	Values						Scores						Total Score	
		EI	SR	RS	SMI	IM	CE	EI	SR	RS	SMI	IM	CE		
201	Meat products	0.18	0.40	-3	251	-6	270	40	0	0	10	0	0	50	
202	Dairy products	0.18	0.35	0	251	-16	68	40	0	0	10	0	0	50	
203	Preserved fruits and vegetables	0.18	0.57	-2	251	-31	184	40	0	0	10	0	0	50	
204,207	Grain mill products and fats and oils	0.18	2.31	-6	251	-63	506	40	20	0	10	0	0	70	
205	Bakery products	0.18	0.79	-2	251	-33	227	40	0	0	10	0	0	50	
206	Sugar and confectionery products	0.18	0.03	0	261	-1	4	40	0	0	10	0	0	50	
208	Beverages	0.18	0.66	-2	292	-25	155	40	0	0	10	0	0	50	
209	Miscellaneous food and kindred products	0.18	5.15	-13	298	-193	1,289	40	20	0	10	0	5	75	
21	Tobacco products	-0.20	0.49	14	298	-3	26	0	0	0	10	0	0	10	
221-224,226,228	Weaving, finishing, yarn, and thread mills	-0.49	0.00	-10	298	-3	1	0	0	0	10	0	0	10	
225	Knitting mills	-0.49	0.00	-1	298	0	0	0	0	0	10	0	0	10	
227	Carpets and rugs	-0.49	0.00	0	298	0	0	0	0	0	10	0	0	10	
229	Miscellaneous textile goods	-0.49	0.01	-5	298	-1	1	0	0	0	10	0	0	10	
231-238	Apparel	-0.29	0.36	-83	298	-181	308	0	0	0	10	0	0	10	
239	Miscellaneous fabricated textile products	-0.29	1.43	-94	298	-30	481	0	20	0	10	0	0	30	
261-263	Pulp, paper, and paperboard mills	0.14	0.25	6	298	-12	77	40	0	0	10	0	0	50	
265	Paperboard containers and boxes	-0.20	1.36	29	298	-25	419	0	20	20	10	0	0	50	
267	Converted paper products except containers	0.14	2.31	56	298	-72	790	40	20	20	10	0	5	95	
271	Newspapers	-0.12	0.32	12	298	-23	214	0	0	0	10	0	0	10	
272	Periodicals	0.14	0.04	0	298	0	8	40	0	0	10	0	0	50	
273	Books	0.09	0.88	10	298	-3	183	40	0	0	10	0	0	50	
274	Miscellaneous publishing	-0.12	0.20	1	298	-1	27	0	0	0	10	0	0	10	
275-276	Commercial printing and business forms	-0.12	0.62	32	298	-23	594	0	0	20	10	0	5	95	
277	Greeting cards	-0.12	65.04	150	298	-208	2,603	0	20	20	10	0	5	55	
278	Blankbooks and bookbinding	-0.12	0.14	1	298	-2	15	0	0	0	10	0	0	10	
279	Service industries for the printing trade	-0.12	0.15	1	298	-2	12	0	0	0	10	0	0	10	
281,286	Industrial chemicals	1.47	0.01	-14	328	-4	5	40	0	0	10	0	0	50	
282	Plastics materials and synthetics	1.47	0.03	-21	395	-5	7	40	0	0	10	0	0	50	
283	Drugs	1.47	0.03	-31	395	-4	10	40	0	0	10	0	0	50	
284	Soap, cleaners, and toilet goods	1.47	0.10	-65	395	-9	22	40	0	0	10	0	0	50	
285	Paints and allied products	1.47	0.08	-19	399	-5	8	40	0	0	10	0	0	50	
287	Agricultural chemicals	1.47	1.64	-345	399	-85	118	40	20	0	10	0	0	70	
289	Miscellaneous chemical products	1.47	0.20	-78	399	-12	26	40	0	0	10	0	0	50	
291	Petroleum refining	3.07	0.00	0	399	0	0	40	0	0	10	0	0	50	
295,299	Miscellaneous petroleum and coal products	3.07	0.78	-11	399	-5	43	40	0	0	10	0	0	50	
301	Tires and inner tubes	-0.05	0.70	4	453	-9	78	40	0	0	10	0	0	50	
302,305,308	Rubber products and plastic hose and footwear	-0.13	1.99	24	514	-13	519	0	20	20	10	0	0	50	
308	Miscellaneous plastics products, nec	-0.13	2.78	130	514	-10	2,785	0	20	20	10	0	5	55	
313,314	Footwear, except rubber and plastic	-0.36	0.07	7	514	-9	4	0	0	0	10	0	0	10	
311,315-317,319	Luggage, handbags, and leather products, nec	-0.36	0.37	-39	514	-20	24	0	0	0	10	0	0	10	
10	Metal mining	0.73	0.00	0	514	0	0	40	0	0	10	0	0	50	
12	Coal mining	0.73	0.00	0	525	0	0	40	0	0	10	0	0	50	
131,132	Crude petroleum, natural gas and gas liquids	0.73	0.06	3	525	-8	14	40	0	0	10	0	0	50	
138	Oil and gas field services	0.73	0.01	1	602	0	2	40	0	0	10	0	0	50	
14	Nonmetallic minerals, except fuels	0.73	1.32	50	602	-41	267	40	20	20	10	0	0	90	
15-17	Construction	-0.36	1.71	-2,473	602	1,885	19,885	0	20	0	10	0	5	35	
40	Railroad	2.94	2.39	-77	602	-173	716	40	20	0	10	0	5	75	
42	Trucking	-0.37	1.02	-261	602	-266	3,294	0	20	0	10	0	5	35	
41	Local/interurban	-0.96	0.90	0	602	63	726	0	20	0	10	5	5	40	
45	Air Transportation	0.03	0.18	234	602	17	293	40	0	20	10	5	0	75	
44	Water transportation	0.03	0.09	-78	602	-3	27	40	0	0	10	0	0	50	
46	Pipelines, except natural gas	0.03	0.66	-44	624	-23	16	40	0	0	10	0	0	50	
472	Passenger transportation arrangement	-0.38	0.21	-245	624	16	86	0	0	0	10	0	0	10	
473,474,478	Miscellaneous transportation services	0.03	0.52	-575	624	123	201	40	0	0	10	0	0	50	
48	Communications	1.49	1.60	2,120	624	87	3,472	40	20	20	10	5	5	100	
491,493	Electric utilities	3.72	0.22	30	624	-30	146	40	0	20	10	0	0	70	
492,493	Gas utilities	3.72	0.17	9	624	-8	43	40	0	0	10	0	0	50	
494-497,499	Water and sanitation	3.72	0.14	11	624	1	49	40	0	0	10	5	0	55	

Appendix H. Kansas City Metro Region Target Industries														
SIC	Industry	Values						Scores						Total Score
		EI	SR	RS	SMI	IM	CE	EI	SR	RS	SMI	IM	CE	
60	Depository institutions	0.23	0.78	522	674	-226	2,805	40	0	20	10	0	5	75
63	Insurance carriers	0.14	0.63	-735	674	-182	1,609	40	0	0	10	0	5	56
64	Insurance agents, brokers, and services	0.14	0.96	-643	753	-92	1,410	40	20	0	10	0	5	75
61,67	Nondepository, holding and investment offices	0.06	0.27	-35	947	145	459	40	0	0	10	0	0	50
62	Security and commodity brokers	0.06	0.07	-7	947	36	96	40	0	0	10	0	0	50
65	Real estate	-0.70	0.47	535	947	-66	2,640	0	0	20	10	0	5	36
58	Eating & drinking	-0.80	1.42	-1,265	947	291	16,244	0	20	0	10	0	5	36
52,57,59	Retail	-0.68	1.26	-8,241	1,024	626	31,900	0	20	0	10	0	5	36
50,51	Wholesale trade	-0.02	0.67	-1,854	1,024	-97	6,691	40	0	0	10	0	5	56
70	Hotels and other lodging places	-0.43	0.69	77	1,024	-17	1,885	0	0	20	10	0	5	36
721,725	Laundry, cleaning, and shoe repair	-0.81	1.48	-7	1,182	-107	1,700	0	20	0	10	0	5	36
722,729	Personal services, nec	-0.81	2.29	-9	1,182	173	1,647	0	20	0	10	0	5	36
723,724	Beauty and barber shops	-0.81	1.53	-11	1,182	-84	2,575	0	20	0	10	0	5	36
726	Funeral service and crematories	-0.81	1.46	-1	1,508	16	324	0	20	0	10	0	0	30
762	Electrical repair shops	-0.81	2.00	-2	1,508	-34	588	0	20	0	10	0	5	36
763-764	Watch, jewelry, & furniture repair	-0.81	2.37	-1	1,758	-37	337	0	20	0	10	0	0	30
769	Miscellaneous repair services	-0.81	1.27	-5	1,758	-28	1,027	0	20	0	10	0	5	36
88	Private households	-0.94	1.25	-7	1,758	-595	2,132	0	20	0	10	0	5	36
751	Automotive rentals, without drivers	-0.19	1.17	-6	2,154	36	393	0	20	0	0	0	0	20
752-754	Automobile parking, repair, and services	-0.19	1.61	-52	2,300	326	3,500	0	20	0	0	0	5	25
731	Advertising	-0.54	0.32	3	2,300	4	161	0	0	0	0	5	0	5
734	Services to buildings	-0.54	0.85	37	2,521	74	1,716	0	0	20	0	5	5	30
735	Miscellaneous equipment rental and leasing	-0.54	1.79	20	2,521	79	926	0	20	20	0	5	5	50
736	Personnel supply services	-0.54	0.28	30	2,521	369	1,421	0	0	20	0	5	5	30
737	Computer and data processing services	-0.09	0.79	45	2,521	549	2,075	40	0	20	0	5	5	70
732,733,738	Miscellaneous business services	-0.54	0.79	77	2,521	456	3,499	0	0	20	0	5	5	30
792	Producers, orchestras, and entertainers	-0.52	0.78	171	2,521	14	456	0	0	20	0	5	0	25
793	Bowling centers	-0.52	5.43	345	2,521	-84	923	0	20	20	0	0	5	45
794	Commercial sports	-0.52	0.27	29	2,521	8	78	0	0	20	0	5	0	25
791,799	Amusement and recreation services, nec	-0.52	2.14	2,062	2,521	563	5,495	0	20	20	0	5	5	50
781,783	Motion pictures	-0.71	0.38	-196	2,521	98	259	0	0	0	0	0	0	0
784	Video tape rental	-0.71	1.20	-257	2,521	76	340	0	20	0	0	0	0	20
801-804	Offices of health practitioners	-0.43	0.81	-374	2,572	113	3,889	0	0	0	0	0	5	5
805	Nursing and personal care facilities	-0.43	1.30	-345	2,892	132	3,580	0	20	0	0	0	5	25
806	Hospitals	-0.43	0.72	-407	2,892	-356	4,232	0	0	0	0	0	5	5
801-809	Health services, nec	-0.43	0.63	-125	2,892	262	1,265	0	0	0	0	0	5	5
81	Legal services	-0.25	0.50	-30	3,083	-62	1,237	0	0	0	0	0	5	5
871	Engineering and architectural services	-0.25	0.65	-31	3,711	84	1,298	0	0	0	0	0	5	5
873	Research and testing services	-0.25	0.15	-5	3,734	-9	188	0	0	0	0	0	0	0
874	Management and public relations	-0.25	0.60	-34	3,983	278	1,408	0	0	0	0	0	5	5
872,89	Accounting, auditing, and other services	-0.25	0.42	-20	3,983	-13	858	0	0	0	0	0	5	5
82	Educational services	-0.57	1.17	77	4,158	-14	4,540	0	20	20	0	0	5	45
832,839	Individual and miscellaneous social services	-0.73	0.15	37	4,224	14	190	0	0	20	0	5	0	25
833	Job training and related services	-0.73	1.05	89	4,224	20	449	0	20	20	0	5	0	45
835	Child day care services	-0.73	0.79	231	4,407	198	1,173	0	0	20	0	5	5	30
836	Residential care	-0.73	1.11	211	4,878	-45	1,071	0	20	20	0	5	5	50
84	Museums, botanical, zoological gardens	-0.73	0.14	3	6,017	0	17	0	0	0	0	5	0	5
86	Membership organizations	-0.73	0.79	481	6,017	13	2,246	0	0	20	0	5	5	30
07	Agricultural services	-0.92	0.49	-492	6,017	167	1,256	0	0	0	0	0	5	5
06,09	Forestry, fishing, hunting, & trapping	-0.92	0.01	0	6,017	-1	2	0	0	0	0	0	0	0